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12/30/2003

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EXAMINER

TECKLU, ISAAC TUKU

ART UNIT

PAPER NUMBER

2192

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/749,740	NIKOLOV, NIKOLAI G.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ISAAC T. TECKLU	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/10/05, 11/13/05, 02/06/07, 04/19/07</u> .                  | 6) <input type="checkbox"/> Other: _____                          |



### **DETAILED ACTION**

1. This action is responsive to the application filed on 12/30/03.
2. Claims 1-42 have been examined.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: e.g. FIG. 4B, element 422, 424 and 425. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

4. Claims 15 and 36 are objected to because of the following informalities: Claims 15 and 36 recite acronym "invokespecial instruction" (in line 3). "invokespecial" should be in two words as 'invoke special'. Appropriate correction is required.

***Information Disclosure Statement***

5. The information disclosure statement filed November 13, 2006, fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the cited document is not referred to by date or place of publication. However, a document believed to be equivalent to the applicant-cited document is cited in the attached Notice of References Cited, form PTO-892. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 22-42 are rejected under 35 U.S.C 101 because the claimed invention is directed to non-statutory subject matter

Claim 22 recites “machine readable medium” defined to include propagation media (page 68, paragraph [0164]). Thus, under the Interim Guidelines such media do not fall within one of

the four statutory classes of 35 U.S.C. 101 (See Annex IV). Therefore, the above claims are non-statutory.

A computer-readable media is a tangible physical article or object, some form of matter, which a signal (infrared)/carrier wave is not. That the other two product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal/carrier wave, a form of energy, does not fall within either of the two definitions of manufacture. Thus, a signal/carrier wave does not fall within one of the four statutory classes of Sec. 101. See Annex IV (c) Electro-Magnetic Signals, Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility (signed October 26, 2005) – OG Cite: 1300 OG 142. Online version can be retrieved at <http://www.uspto.gov/web/offices/com/sol/og/2005/week47/patgupa.htm>

Under the principles of compact prosecution, claims 22-42 have been examined as the Examiner anticipates the claims will be amended to obviate these 35 USC 101 issues. For example, A computer-readable physical storage medium...-

Claims 23-42 are rejected for failing to cure the deficiencies of the above rejected non-statutory claim 22 above.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berry et al. (US 2004/0031020 A1) in view of Frysinger et al. (US 2004/0060043 A1).

Per claim 1, Berry discloses a classfile modification method, comprising:

modifying a classfile after said classfile has been compiled from source code, said classfile describing properties of a class within an object oriented environment (paragraph [0011] "... modify any code in an existing class file ..."), said modifying comprising:

modifying a method information structure by adding byte code instructions to the byte code instructions of said method information structure's respective method (paragraph [0023] "... adding one or more lines of code ..."), said byte code instructions to cause a plug-in module's handler method to execute an output function for said method (e.g. FIG. 2, 207 INSERT BYTE CODE SEQUENCE INTO TOP OF METHOD and related text); and,

adding a method information structure that includes byte code instructions for registering the identities of said class and said method (paragraph [0030] "... instrumentation interface ...

record types of arguments and return values ... each entry maintained as a count ..." and paragraph [0058] "... byte code sequence is inserted into the top of the method ...") with a dispatch unit that is responsible for dispatching an invocation to said plug-in module during runtime execution of said modified byte code (paragraph [0017] "... byte code is modified so that when it executes and methods are made ..."), said invocation directed to said dispatch unit from said added byte code instructions (e.g. FIG. 1 and FIG. 3, INSTRUMENT METHOD 340 and related text).

Berry does not explicitly disclose modifying a class file after said class file has been compiled from source code. However, Frysinger discloses method and apparatus for instrumentation of a code where Java is used. For example, [0021] a programmer may write source code in step 105 using a text editor and save the source code to a java file. In step 110, the source code is compiled by the Java compiler into object code contained in a separate .class file. In step 115, a user manually modifies .class files with additional byte codes for all .class files that have been identified for instrumentation. The class files are a set of byte codes that are a standardized sequence of instructions. Therefore it would have been obvious to one skilled in the art at the time the invention was made to modify a class file after said class file has been compiled from source code as it is advantageous to the instrumentation step on compiled code rather than to the source code as once suggested by Frysinger (paragraph [0020-0021]).

Per claim 2, Berry discloses the class files modification method of claim 1 wherein said identities are each in a character string format (paragraph [0028] "... argument types may be string...").



Per claim 3, Berry discloses the class file modification method of claim 2 wherein said modifying a class file further comprises:

adding a field information structure, said field information structure describing a field that is to store a numeric identifier of said class (paragraph [0009] "... instruction modifies a field ...").

Per claim 4, Berry discloses the class file modification method of claim 3 wherein said numeric identifier is provided to said class by a method of which said dispatch unit is comprised (paragraph [0013] "... parameter defined by the method and the method returns a value ...").

Per claim 5, Berry discloses the class file modification method of claim 1 wherein a portion of said byte code instructions that are added to said method are for causing said plug-in module's handler method to provide said output function treatment in response to an entry point of said method being reached (paragraph [0021] "... adding one or more lines of code to report incoming arguments ...").

Per claim 6, Berry discloses the classfile modification method of claim 5 wherein said output function treatment is a function selected from the group consisting of:

1) recording a time of entry for said method (paragraph [0101] "... records information about frequency of entries ...");

2) recording an input parameter value for said method (paragraph [0033] "... record of incoming arguments and values ..."); and,

3) incrementing a counter for said method (paragraph [0103] "... count is incremented ...").

Per claim 7, Berry discloses the classfile modification method of claim 1 wherein a portion of said byte code instructions that are added to said method are for causing said plug-in module's handler method to provide said output function treatment in response to an exit point of said method being inevitably reached (paragraph [0021] "... adding one or more lines of code to report incoming arguments ...").

Per claim 8, Berry discloses the classfile modification method of claim 7 wherein said output function treatment is a function selected from the group consisting of:

1) recording a time of entry for said method (paragraph [0101] "... records information about frequency of entries ...");

2) recording an input parameter value for said method (paragraph [0033] "... record of incoming arguments and values ..."); and,

3) incrementing a counter for said method (paragraph [0103] "... count is incremented ...").

Per claim 9, Berry discloses the classfile modification method of claim 7 wherein portions of said byte code instructions that are added to said method are for causing said plug-in module's handler method to provide said output function treatment in response to any exit point of said method being inevitably reached (paragraph [0021] "... adding one or more lines of code to report incoming arguments ...").

Per claim 10, Berry discloses the classfile modification method of claim 1 wherein a portion of said byte code instructions that are added to said method are for causing said plug-in module's handler method to provide said output function treatment in response to an error arising during execution of said method (e.g. FIG. 3 and related text).

Per claim 11, Berry discloses the classfile modification method of claim 1 wherein:

a first portion of said byte code instructions that are added to said method are for causing said plug-in module's handler method to execute said output function treatment in response to an entry point of said method being reached (e.g. FIG. 2, 207 INSERT BYTE CODE SEQUENCE INTO TOP OF METHOD and related text);

a second portion of said byte code instructions that are added to said method are for causing said plug-in module's handler method to execute said output function treatment in response to an exit point of said method being inevitably reached (paragraph [0030] "... instrumentation interface ... record types of arguments and return values ... each entry maintained as a count ..." and paragraph [0058] "... byte code sequence is inserted into the top of the method ..."); and,

a third portion of said byte code instructions that are added to said method are for causing said plug-in module's handler method to execute said output function treatment in response to an error arising during execution of said method (e.g. FIG. 3, step 306 and related text).

Per claim 12, Berry discloses the classfile modification method of claim 1 wherein at least one of said instructions invokes a second method of which said dispatch unit is comprised (e.g. FIG. 1 and related text).

Per claim 13, Berry discloses the classfile modification method of claim 12 wherein said byte code instructions are Java compatible and wherein said at least one of said instructions is an invoke special instruction (paragraph [0068] "... call is inserted ...").

Per claim 14, Berry discloses the classfile modification method of claim 12 wherein said byte code instructions are Java compatible and wherein said at least one of said instructions is an invokevirtual instruction (paragraph [0046] "... Java VM...").

Per claim 15, Berry discloses the classfile modification method of claim 12 wherein said byte code instructions are Java compatible and wherein said at least one of said instructions is an invoke special instruction (paragraph [0068] "... call is inserted ...").

Per claim 16, Berry discloses the classfile modification method of claim 12 wherein said second method references a dictionary that correlates a numeric identification of said method and said class to a location where said plug-in module is found (paragraph [0024] "... appropriate reference inserted into the constant pool...").

Per claim 17, Berry discloses the classfile modification method of claim 1 wherein said modifying of said classfile further comprises modifying a second method information structure by adding byte code instructions to said second method information structure's respective method, said byte code instructions to cause a second plug-in module's handler to execute output function treatment for said respective method (paragraph [0030] "... instrumentation interface ... record types of arguments and return values ... each entry maintained as a count ...") and paragraph [0058] "... byte code sequence is inserted into the top of the method ...").

Per claim 18, Berry discloses the classfile modification method of claim 17 wherein said second method is a constructor (paragraph [0012] "... method reconstructs a class file ...").

Per claim 19, Berry discloses the classfile modification method of claim 1 further comprising adding byte code level instructions that assign numeric names to said classfile's methods in lieu of character string names (paragraph [0053] "... string name ...").

Per claim 20, Berry discloses the classfile modification method of claim 19 wherein said numeric names are based upon the order in which said methods are listed in said classfile, each next method in said order having a numeric name equal to a fixed increment above the numeric name for its immediately preceding method in said order (paragraph [0101] "... entries with name ... signature ... identification ...").

Per claim 21, Berry discloses the classfile modification method of claim 20 wherein said byte code instructions for registering are configured to execute in response to said classfile being loaded (e.g. FIG. 3, step 305-306 and related text).

Per claim 22, this is the machine readable medium version of the claimed method discussed above (Claim 1), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 23, this is the machine readable medium version of the claimed method discussed above (Claim 2), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 24, this is the machine readable medium version of the claimed method discussed above (Claim 3), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 25, this is the machine readable medium version of the claimed method discussed above (Claim 4), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 26, this is the machine readable medium version of the claimed method discussed above (Claim 5), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 27, this is the machine readable medium version of the claimed method discussed above (Claim 6), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 28, this is the machine readable medium version of the claimed method discussed above (Claim 7), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 29, this is the machine readable medium version of the claimed method discussed above (Claim 8), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 30, this is the machine readable medium version of the claimed method discussed above (Claim 9), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 31, this is the machine readable medium version of the claimed method discussed above (Claim 10), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 32, this is the machine readable medium version of the claimed method discussed above (Claim 11), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 33, this is the machine readable medium version of the claimed method discussed above (Claim 12), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 34, this is the machine readable medium version of the claimed method discussed above (Claim 13), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 35, this is the machine readable medium version of the claimed method discussed above (Claim 14), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 36, this is the machine readable medium version of the claimed method discussed above (Claim 15), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 37, this is the machine readable medium version of the claimed method discussed above (Claim 16), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 38, this is the machine readable medium version of the claimed method discussed above (Claim 17), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 39, this is the machine readable medium version of the claimed method discussed above (Claim 18), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.



Per claim 40, this is the machine readable medium version of the claimed method discussed above (Claim 19), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 41, this is the machine readable medium version of the claimed method discussed above (Claim 20), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 42, this is the machine readable medium version of the claimed method discussed above (Claim 21), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ISAAC T. TECKLU whose telephone number is (571)272-7957. The examiner can normally be reached on M-TH 9:300A - 8:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Isaac T Tecklu/

Examiner, Art Unit 2192

/Tuan Q. Dam/

Supervisory Patent Examiner, Art Unit 2192

